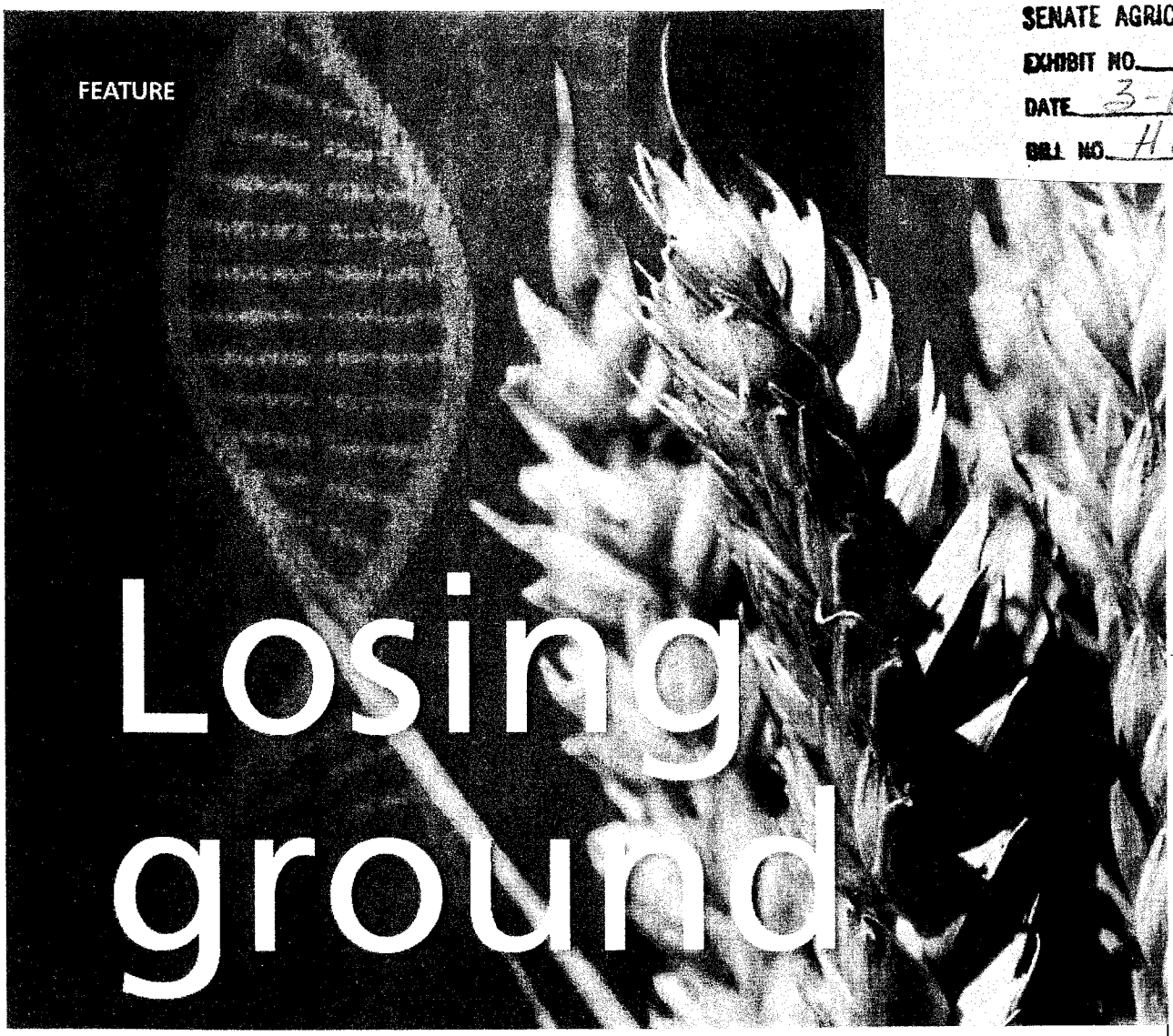


# Losing ground

by Nicholas Zeman

## Experts say the decline in wheat acreage will not be reversed unless a genetically modified version of the crop is commercialized

Travelers going north from Omaha, Nebraska aren't likely to see fields of wheat until they reach Watertown, South Dakota, and even by that point the crop isn't ubiquitous. In this expanse of the American plains, travelers are much more likely to see vast rows of corn and soybeans, said Richard Taylor of North Dakota State University's Center for Agriculture and Trade Policy in Fargo, North Dakota, U.S. "Wheat has been disappearing from the upper plains," he told *World Grain*.

In the United States (U.S.), which has been feeding and consuming genetically modified (GM) crops for years, wheat has been in fierce competition with GM species that possess bountiful yields, resist disease and are value-added inputs for the biofuels sector. The North American Millers' Association (NAMA) says that in 2008, 100% of the sugar beet crop, 90% of soybeans, 80% of corn and 85% of cotton possessed some genetically modified characteristic. As for the wheat crop, that percentage is zero.

The 1996 version of the Farm Bill ended allotments, which had basically dictated the number of hectares each commodity would be allotted on an annual basis. After this change, farmers had more freedom to choose their plantings based on market conditions. About the same time, strains of GM corn and soy-

beans hit the market and became quite popular. Combine these factors with a wet cycle on the upper Great Plains over the past 15 years, and the situation has become pretty serious for wheat.

*"The reduction in wheat production in Kansas during the past 10 years is equivalent to taking the four top wheat-producing counties in Kansas and wiping them off the map."*

— Jim Bair, vice-president, NAMA

It doesn't help that U.S. public wheat research has been less than $50 million per year while other commodities, such as corn, receive upwards of $1 billion-per-year. "Private research has also been little —it's all about the money," said Jim Bair, vice-president of Washington, D.C., U.S.-based NAMA. "Wheat returns don't make it happen."

In addition, wheat yields are basically unchanged over the last decade compared with the previously mentioned competing commodities, which have seen dramatic improvements thanks largely to genetic technology. "Farmers are smart and they are going to plant whatever gives them the best yields and the best returns," Bair said. "In North Dakota, wheat plantings were down 2.5 million acres."

Plantings of transgenic crops are up, however, to 114 million hectares worldwide, but no wheat exporting nation has commercialized a strain of GM wheat. Over the last 25 years, world wheat production increased roughly 28% and use increased roughly 32%. For the past seven years, world consumption has outpaced production, and harvested areas are down 8%.

These numbers suggest the present situation is not sustainable.

## RUNNING A RISK

Millers in the U.S. now import almost 100% of oats from Canada, and they do not want to see wheat follow suit. "In Kansas, North Dakota and Minnesota, three traditionally wheat-growing states, it is being pushed out," Bair says.

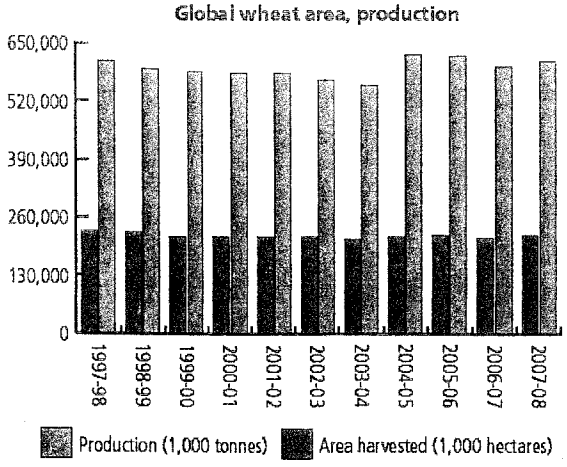
Bair emphasized this point during his keynote address at the 2008 International Association of Operative Millers Conference by pointing out that Kansas, long known as "The Wheat State," produced more bushels of corn than wheat in 2007.

"The reduction in wheat production in Kansas during the past 10 years is equivalent to taking the four top wheat-producing counties in Kansas and wiping them off the map," Bair said during his keynote address.

Wheat has certainly been declining into a minor crop in the Red River Valley, an area in the northern U.S. which runs through North Dakota and Minnesota that was once one of the nation's strongholds for wheat production and where North Dakota Mill, the nation's largest flour milling facility in terms of production capacity, is located.

Because the mill in Grand Forks, North Dakota is state-owned, it has to buy its wheat from North Dakota growers — a situation that has caused some strain at times. "The mill has been under pressure to honor its bylaws at times over the past year or two," said Taylor. "But North Dakota still has a surplus of wheat and it is still an exporting state, so the situation isn't too serious."

Right when Red River Valley farmers were having a problem with wheat scab (Fusarium head blight), along came biotech corn and soybeans, giving them the perfect and simple solution to their problems — switch crops.




*Source: U.S. Department of Agriculture*

"Wheat has more or less been transitioned into a minor crop in the Red River Valley, so we need a strain of GM wheat that is a success, and we need to get some of these areas back in production," Taylor said.

Rebecca Bratter, policy director for USW, said if growers cannot compete, then wheat runs the risk of becoming a high-end commodity. "We have to provide more of an incentive to plant wheat and we have to have a GM strain," she said.

## GM OPPONENTS SOFTENING

Proponents of the development of GM wheat say transgenic crops can actually improve food safety in regard to cultivation practices. In fact, USW estimates GM crops allowed farmers to avoid the use of 224 to 300 million tons of pesticide between 1996 and 2005. Because GM crops are so pervasive in the western hemisphere, opposition to the technology is starting to become a moot point.

"Europe has more or less been forced to accept GMO corn and soybeans," Taylor said. "Argentina, Brazil and the U.S. have all switched."

However, opponents of GM crops, including wheat, say that their development should be stopped until certain criteria and safety infrastructure are established. Among those precursors to the development of commercialized GM wheat is a demonstrated demand for the product in both domestic and foreign markets. Until then, there will be no disruption of the market for organic and conventional non-GM wheat.

"The organic industry has its own containers and its own distribution system, which is totally independent," Taylor said. "As for cross-pollination, there would be problems with or without GM strains."

In terms of adequate demand, Bair said biotechnology already exists in the other major food ingredients like sugar and oil and will likely be a part of breads and other whole grain food products around the world. NAMA said the consumer is ready to accept GMO wheat products as they have others.

"Show me one piece of data that shows me people have stopped eating these things," Bair said. "I doubt anyone could show me that data." In other words, the demand is there, and the economics will eventually trump the politics involved in the GMO situation.

The successes of GMO crops have eased tensions on the growers' side of the supply chain as well. Traditionally, North Dakota wheat growers have been opposed to genetic development, but that position has changed over the past three or four

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years, partly because of the proliferation of other crops in the region at the expense of food grain. "I would say that their position has softened," Taylor said.

Australia, one of the world's leading grain exporters, was also worried that it could lose export markets, especially in Korea and Japan, if their primary feedstuff was genetically modified.

"Our producers have seen Canada shipping GM canola to Japan," said T.J. Higgins, chief research scientist and deputy chief of the plant industry division at the Commonwealth Science Industry Research Organization (CSIRO) in Canberra, Australia. "So they believe that the market would also accommodate them if they followed suit with wheat."

CSIRO Plant Industry is one of the world's leading plant science centers, with an annual budget of $87.9 million and around 720 employees at eight sites around Australia. Higgins said the group is very active in wheat research. Because wheat is king in Australia and has little competition to speak of — less than 100,000 acres each of corn and soybeans compared to 25 million acres of wheat — it pours more money and resources into research and is a leader in the investigation of GM technologies for wheat.

*"Water is the main concern for Australian wheat growers, and they are very interested in how biotechnology can help them with that."*

— T.J. Higgins, research scientist, CSIRO

Australia exports 70% of its wheat, and the industry now sees the integration of biotechnology as an essential part of its future success.

"Growers here have certainly embraced GM cotton, and I think they are ready to do the same with wheat," Higgins told *World Grain*. "For instance, water is the main concern for Australian wheat growers, and they are very interested in how biotechnology can help them with that."

The good news is that both the private and public sectors are at work on various GM strains of wheat, but by no means is an event eminent.

"This is a 10-year scenario," Bratter said. She currently serves on the Joint Biotechnology Group with USW and the National Association of Wheat Growers, which is working toward the ultimate goal of the commercialization of GM wheat.

These projects remain high up in the gene discovery pipeline, but water-use efficiency, nitrogen- and phosphorous-use efficiency and traits related to grain quality are all actively under investigation. "Australian producers are also very worried about a strain of rust migrating from Africa and they want to be ready for that situation," Higgins says. "But this is still five to seven years away."

For other crops, however, new breakthroughs are imminent. Steve Mercer, communications director for USW, said that recent breakthroughs for the commercialization of a drought-resistant corn variety are only increasing the seriousness of the situation for wheat. Monsanto Co. announced in January that it is taking steps to commercialize a strain of drought-resistant corn. "Drought-tolerant corn would give dry land wheat



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Bair

producers another crop and, so far, one that is more profitable," Mercer said.

Monsanto once had a strain of "Roundup Ready" wheat close to commercialization, but the project was shelved in 2004 in response to several market factors such as perceived lack of demand and grower opposition. Monsanto abandoned the project despite having spent seven years and hundreds of millions of dollars to develop GM wheat.

"It was really a devastating blow when they pulled the plug," Taylor said. "We lost millions of research dollars when that happened."

For "Roundup Ready" wheat to be dusted off, industry leaders need to continue building support, primarily among consumers. If the demand is there, the speed of the process will accelerate. Right now the problem is that all the benefits go to the producer. Therefore, it has been difficult to build support among consumers when they have little at stake in the situation.

"Different qualities need to be placed into GM foods so that they have more benefit for consumers — added protein, higher quality, less toxins," Taylor said.

In January, the National Association of Wheat Growers (NAWG) decided that it needed to gauge the position of producers on the GMO situation and sent a survey seeking opinions on the development of biotech traits in the wheat sector. "The petition is designed to document the depth and breadth of support for biotechnology among wheat producers," said Daren Coppock, NAWG's chief executive officer. "Anecdotally, we're convinced the support is there. This petition will either confirm or confront that belief."

In conjunction with USW, Coppock and others are urging that the U.S., Canada and Australia meet as soon as possible to develop a timetable for the eventual commercialization of a biotech wheat product.

Obviously, before Monsanto would revamp its "Roundup Ready" product or before companies interested in commercializing a biotech wheat trait from scratch embark on an expensive effort to develop, deregulate and launch that trait, they would need to be certain of demand for their products.

"These companies rightfully want to know before they undertake such an endeavor that producers want the choice of biotech tools in the wheat variety toolbox and will do what is necessary to obtain that access," the NAWG said.

The results of the survey will be released at Commodity Classic 2009, scheduled for Feb. 26-28 in Grapevine, Texas, U.S. WG

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